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68/655-853 B1

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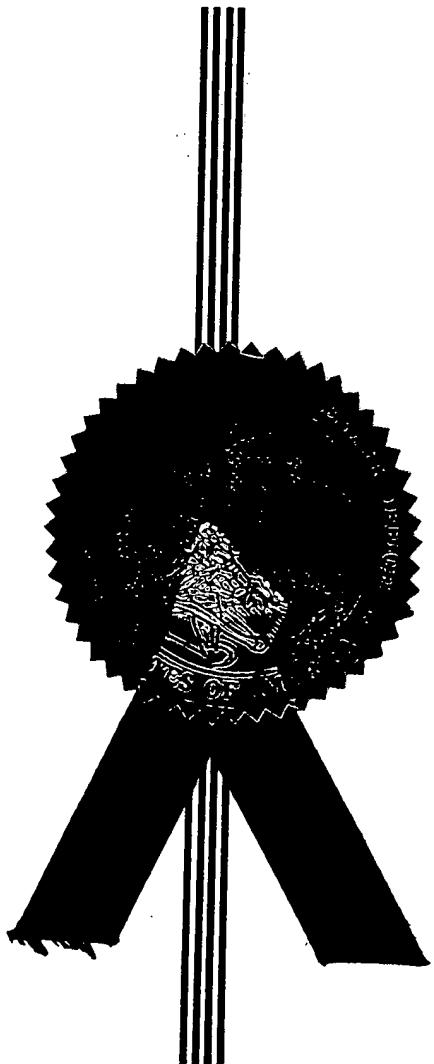
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07/775418

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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person or persons having title to this patent the right to exclude others from making, using or selling the invention throughout the United States of America for the term of seventeen years from the date of this patent, subject to the payment of maintenance fees as provided by law.



Acting Commissioner of Patents and Trademarks


Priscilla A. Fuller

Attest

United States Patent [19]

McMaster et al.

[11] Patent Number: 4,883,527
[45] Date of Patent: Nov. 28, 1989

[54] GLASS SHEET BENDING AND TEMPERING APPARATUS

[75] Inventors: Harold A. McMaster, Woodville; Norman C. Nitschke; Dexter H. McMaster, both of Perrysburg; Ronald A. McMaster, Woodville, all of Ohio

[73] Assignee: Glasstech International L.P., Scarsdale, N.Y.

[21] Appl. No.: 249,718

[22] Filed: Sep. 27, 1988

Related U.S. Application Data

[63] Continuation of Ser. No. 83,675, Aug. 7, 1987, Pat. No. 4,822,398.

[51] Int. Cl. 4

C03B 23/03

[52] U.S. Cl. 65/273; 65/104; 65/106; 65/289; 65/290; 65/348; 65/351

[58] Field of Search 65/104, 106, 107, 273, 65/289, 290, 348, 35

[56]

References Cited

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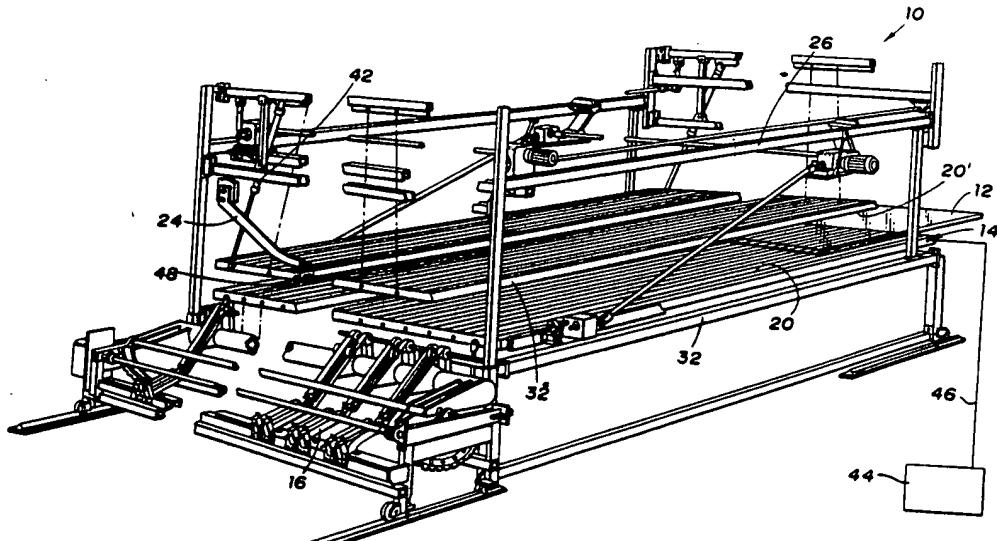
Primary Examiner—Arthur Kellogg
Attorney, Agent, or Firm—Brooks & Kushman

[57]

ABSTRACT

A glass bending and tempering apparatus (10) is disclosed as including a first platen (14) for receiving a heated glass sheet (12) to be bent. The first platen (14) is deformable and includes an actuator (16) for deforming platen (14) from a planar shape to a bent shape. A second platen (22) is mounted above lower platen (14) for bending and quenching glass sheet (12) therebetween the platens. A template (24) is located on the other side of the second platen (22) away from glass sheet (12). Second platen (22) is pressed against template (24) as first platen (14) is deformed from the planar shape to the bent shape to bend the heated glass sheet thereagainst second platen (22), the second platen (22) conforming to template (24). Quenching gas is supplied by both platens (14,22) through quench openings (18) that move with the platens (14,22) to temper the bent glass sheet between the platens.

16 Claims, 6 Drawing Sheets



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